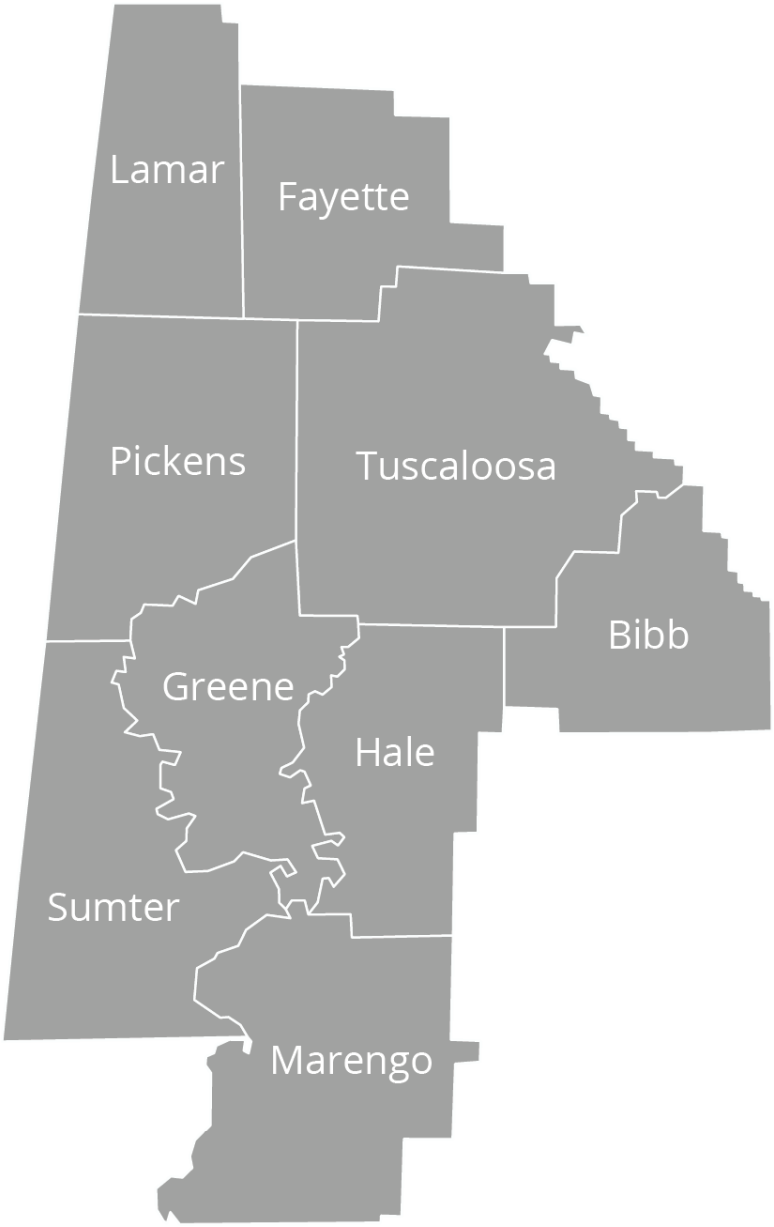
STATE OF THE WORKFORCE REPORT XV:

WEST ALABAMAWORKS



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ACKNOWLEDGMENTS

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Produced by:

Samuel Addy, Ph.D., *Sr. Res. Economist & Assoc. Dean for Economic Development Outreach*
Kilungu Nzaku, Ph.D., *Associate Research Economist*
Ahmad Ijaz, *Executive Director & Director of Economic Forecasting*
Stephanie Normanyo, *Economic Forecaster*
Nyesha Black, Ph.D., *Director of Socioeconomic Analysis & Demographics*
Susannah Robichaux, *Socioeconomic Analyst*
Morgan Cordle, *Associate Director of Research & Outreach*
Katie Howard, *Senior Graphic Designer*

Center for Business and Economic Research
Culverhouse College of Business
The University of Alabama
Box 870221, Tuscaloosa, AL 35487-0221
Tel: (205) 348-6191 Fax: (205) 348-2951
uacber@culverhouse.ua.edu

Dissemination
Nisa Miranda, *Director, University of Alabama Center for Economic Development*

Underemployment Survey
Debra McCallum, Ph.D., *Director & Senior Research Scientist*, Institute for Social Science Research
Michael Conaway, *Capstone Poll Project Coordinator*, Institute for Social Science Research

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SUMMARY

This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for the West AlabamaWorks region and presents some implications and recommendations.

West AlabamaWorks had a 3.7 percent unemployment rate in March 2021, with 5,497 unemployed. An underemployment rate of 25.6 percent for 2020/2021 means that the region has a 42,225-strong available labor pool that includes 36,728 underemployed workers who are looking for better jobs and are willing to commute longer and farther for such jobs.

Net out-commuting rose from 5,088 in 2005 to 8,415 in 2018. Increased commuting within the region and more in- and out-commuting has led to congestion, which could slow economic development. Commute times slightly rose in 2020 from 2019 while distances were down implying congestion worsened in the region. Continuous maintenance and development of transportation infrastructure and systems is needed to avoid congestion and interruptions.

By sector, the top five employers in the region are manufacturing; health care and social assistance; educational services; retail trade; and accommodation and food services. These five industries provided 80,282 jobs, 63.7 percent of the regional total in the first quarter of 2020. Two of the leading employers—manufacturing and educational services—paid higher wages than the region's $4,129 monthly average. Economic development should continue to diversify and strengthen the region's economy by retaining, expanding, and attracting more high-wage providing industries. Workforce development should also focus on preparing workers for such industries.

On average, 4,883 jobs were created per quarter from second quarter 2001 to first quarter 2020; quarterly net job flows averaged 94. Job creation is the number of new jobs that are added in the region either by new businesses or through expansion of existing firms. Net job flows reflect the difference between current and previous employment at all businesses.

The top five high-demand occupations are Combined Food Preparation and Serving Workers, Including Fast Food; Assemblers and Fabricators, All Other, Including Team Assemblers; Retail Salespersons; Laborers and Freight, Stock, and Material Movers, Hand; and Heavy and Tractor-Trailer Truck Drivers.

The top five fast-growing occupations are Occupational Therapy Assistants; Rail-Track Laying and Maintenance Equipment Operators; Physician Assistants; Industrial Engineers; and Home Health Aides.

The top 50 high-earning occupations are in management, health, postsecondary education, and engineering fields and have a minimum mean salary of $90,335. Eight of the top 10 occupations are in health care and the remaining two are in management and engineering.

Of the top 40 high-demand, the top 20 fast-growing, and 50 high-earning occupations, four—Financial Managers; Industrial Production Managers; Industrial Engineers; and Nurse Practitioners—belong to all three categories. Seven occupations are both high-demand and high-earning, five are both high-earning and fast-growing, and seven are both high-demand and fast-growing.

Of the region's 653 occupations, 138 are expected to decline over the 2018 to 2028 period, with the 20 sharpest declining occupations losing a minimum of 10 jobs each (for those with disclosed net change) and at least two percent. Education and training for these 20 occupations should slow accordingly.

Skill and education requirements for jobs keep rising. Educational and training requirements for high-demand, fast-growing, and high-earning occupations demonstrate the importance of education in developing the future workforce. In the future, more jobs will require postsecondary education and training at a minimum with the exception of some technical high-demand occupations related to manufacturing.

The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs indicates a strong need for training in these skills. For West AlabamaWorks, the pace of training needs to increase for technical, complex problem solving, and basic (science) skills; the scale of training should be raised for basic and social skills. Ideally, all high school graduates should possess basic skills so that postsecondary and higher education can focus on other and more complex skills. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps.

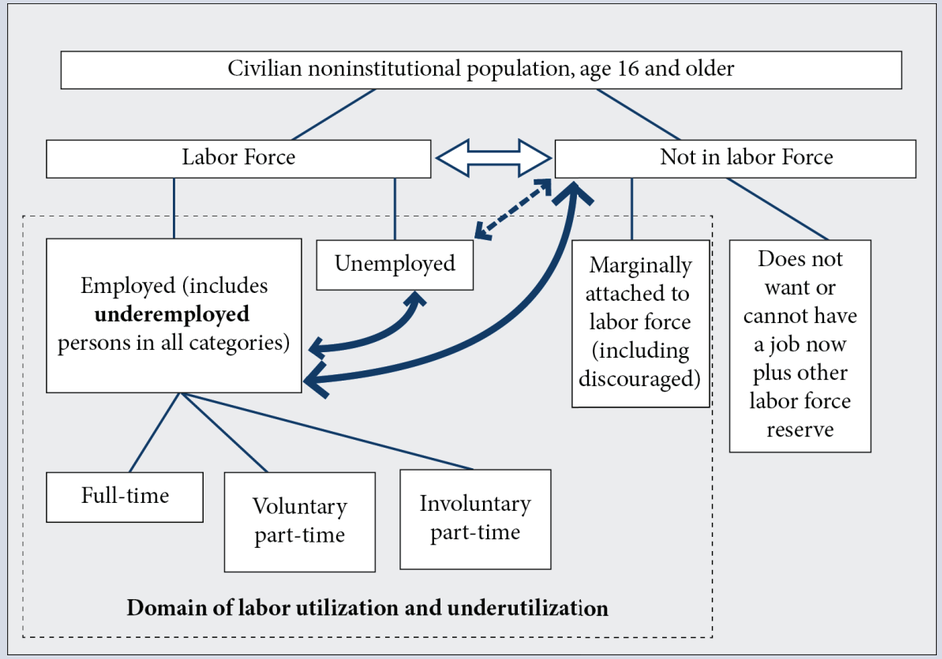
From a 2018 base, worker surpluses of about 8,200 are expected for 2028, 5,400 for 2030, and 6,100 for 2035. By 2040 worker surpluses will grow to 5,000. This trend requires focusing on worker skills and the expected worker surpluses both in the short and long run. Worker shortfalls for critical occupations also need to be addressed continuously. Strategies to address skill needs and worker surpluses might include: (1) improvements in education and its funding; (2) use of economic opportunities to attract new residents; (3) focus on hard-to-serve populations (e.g., out-of-school youth); (4) lowering the high school dropout rate; (5) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (6) encouragement of older worker participation in the labor force; and (7) facilitation of in-commuting.

Improving education is important because (i) a highly educated and productive workforce is a critical economic development asset, (ii) productivity rises with education, (iii) more educated people are more likely to work, and (iv) it yields high private and social rates of return on investment. Workforce development must view all of education and other programs (e.g., adult education, career technical training, worker retraining, career readiness, etc.) as one system. Funding to support workforce development may require tax reform at state and local levels and should provide for flexibility as workforce needs change over time and demand different priorities. Publicizing both private and public returns to education can encourage individuals to raise their own educational attainment levels and promote public and legislative support for education.

Higher incomes that come with improved educational attainment and work skills will help to increase personal income for the region as well as raise additional local (county and city) tax revenues.

Both workforce development and economic development are very essential components in building a strong, well-diversified regional economy.

LABOR UTILIZATION AND SUPPLY FLOWS



Source: Addy et al[1] and Canon et al[2]

The chart above presents labor utilization and supply flows that explain labor market dynamics in view of recent study findings. The civilian non-institutional population age 16 and above is comprised of participants in the labor force and nonparticipants. The labor force is made of employed and unemployed persons; the unemployed do not have a job but are actively searching for work. Employed persons include fully employed and underemployed persons in all categories of work (full-time, voluntary part-time, and involuntary part-time). Nonparticipants in the labor force include retirees (voluntary and involuntary), people who do not want to or cannot work for various reasons (e.g., disability, caring for family members, in school or training, etc.), discouraged workers, and other labor force reserve. It has been suggested that a subgroup of nonparticipants referred to as the "waiting group" is more likely than the rest of the nonparticipants to take a job if wages and conditions are satisfactory, but people in this group do not actively search for work. It has been shown that between January 2003 and August 2013, the flow of nonparticipants into employment was 1.6 times that of unemployed persons transitioning into employment, which may be due to the presence of the waiting group.[1, 2] Nonparticipant flows to employment are larger in services, management, and professional occupations while unemployed flows to employment are higher in physically intensive occupations such as construction workers and miners. Industry effects should vary by the type and number of occupations they contain. This finding enhances the common understanding of labor market dynamics and influences workforce availability and skills gap analyses. Skill and spatial mismatches present additional complications to labor market dynamics. For example, unemployment can coexist with significant job availability.

[1]Addy, S.N., Bonnal, M., and Lira, C. (2012). Towards a More Comprehensive Measure of Labor Underutilization: The Alabama Case, *Business Economics,* vol. 47(3) .
[2]Canon, M.E., Kudlyak, M., and Reed, M. (2014). Not Everyone Who Joins the Ranks of the Employed was "Unemployed", *The Regional Economist*, January.

WORKFORCE SUPPLY

Labor Force Activity

The labor force includes all persons in the civilian noninstitutional population who are age 16 and over and who either have a job or are actively looking for one. Typically, those who have no job and are not looking for one are not included (e.g., students, retirees, discouraged workers, and the disabled). Table 3.1 shows labor force information for the West AlabamaWorks region and its nine counties for 2020 and for March 2021. Alabama labor force information is available from the Labor Market Information (LMI) Division of the Alabama Department of Labor. LMI compiles data in cooperation with the U.S. Bureau of Labor Statistics.

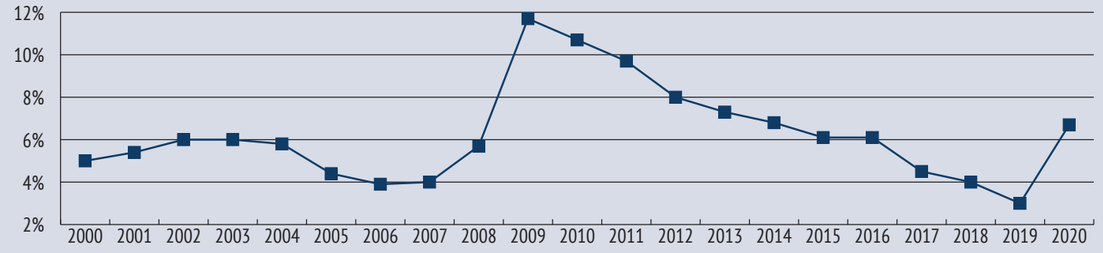
Regional and county unemployment had declined to record levels by 2019 as the state and nation enjoyed the longest economic expansion in decades but rose in 2020 due to the COVID-19 related recession. The pandemic disrupted virtually all economic activities within a short period of time causing unemployment to go up. As personal protection equipment and testing became more available and Congress provided some relief through the CARES Act, businesses and employers resumed operations, albeit, at a staggered pace. This lowered unemployment significantly towards the end of 2020. Annual county unemployment ranged between 4.9 percent to 10.9 percent for 2020 (6.7 percent for the region). The regional unemployment rate was above the statewide rate of 5.9 percent and only two counties (Lamar and Fayette) had unemployment rates below the statewide rate. The regional economy has continued to recover at a fast rate aided by the availability of COVID-19 vaccines and more economic relief through the Consolidated Appropriations Act, 2021 and American Rescue Plan Act, 2021. As of March 2021, county unemployment rates declined and ranged from 2.9 percent in Lamar County to 7.2 percent in Greene County, with a 3.7 percent rate for

Table 3.1 West AlabamaWorks Labor Force Information

	2020 Annual Average			
	Labor Force	Employed	Unemployed	Rate (%)
Bibb	8,640	8,067	573	6.6
Fayette	6,562	6,236	326	5.0
Greene	3,015	2,687	328	10.9
Hale	6,075	5,503	572	9.4
Lamar	5,730	5,452	278	4.9
Marengo	7,766	7,281	485	6.2
Pickens	7,660	7,161	499	6.5
Sumter	4,745	4,414	331	7.0
Tuscaloosa	102,222	95,473	6749	6.6
West ALWorks	152,415	142,274	10,141	6.7
Alabama	2,230,118	2,099,062	131,056	5.9
U.S.	160,742,000	147,795,000	12,947,000	8.1
	March 2021			
	Labor Force	Employed	Unemployed	Rate (%)
Bibb	8,526	8,236	290	3.4
Fayette	6,483	6,281	202	3.1
Greene	2,838	2,635	203	7.2
Hale	5,733	5,415	318	5.5
Lamar	5,626	5,462	164	2.9
Marengo	7,437	7,121	316	4.2
Pickens	7,456	7,157	299	4.0
Sumter	4,550	4,358	192	4.2
Tuscaloosa	100,204	96,691	3,513	3.5
West ALWorks	148,853	143,356	5,497	3.7
Alabama	2,213,954	2,138,166	75,788	3.4
U.S.	160,397,000	150,493,000	9,905,000	6.2

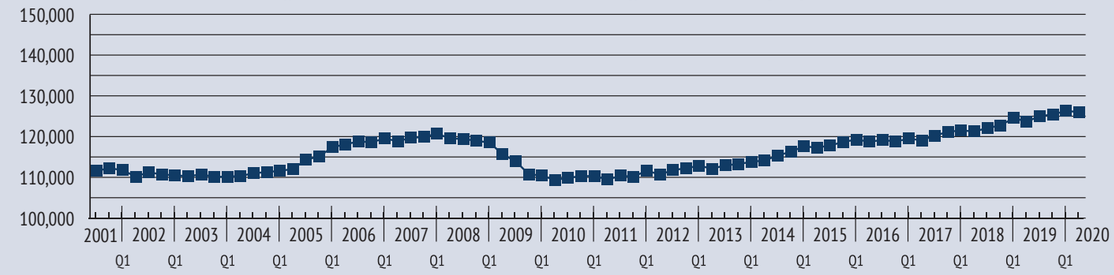
Note: Not seasonally adjusted.
Source: Alabama Department of Labor and U.S. Bureau of Labor Statistics.

Figure 3.1 West AlabamaWorks Unemployment Rate



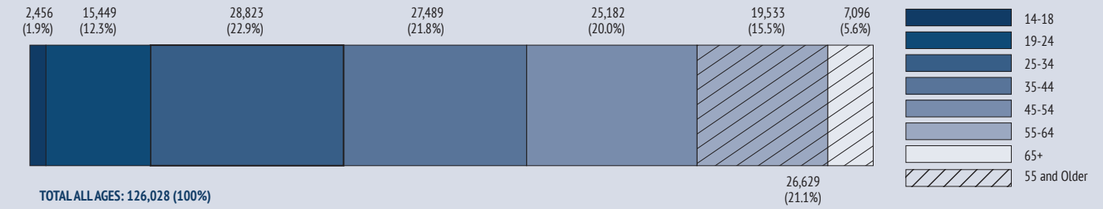
Source: Alabama Department of Labor.

Figure 3.2 West AlabamaWorks Nonagricultural Employment



Source: Alabama Department of Labor and U.S. Census Bureau.

Figure 3.3 Nonagricultural Employment - Workers by Age Group (First Quarter 2020)



Source: U.S. Census Bureau, Local Employment Dynamics Program.
Note: Rounding errors may be present. Nonagricultural employment is by place of work, not residence.

the region, which was lower than 3.4 percent for Alabama. County unemployment rates were above the statewide level in six counties. Only Fayette and Lamar counties' rate were below the state average.

Annual unemployment rates for 2000 to 2020 are shown in Figure 3.1. The region's unemployment rates were low before the 2001 and 2007 economic recessions. The 2002 and 2003 highs of 6.0 percent were due to the effects of the recession of 2001, but successful state and local economic development efforts reduced unemployment to record lows before the more recent financial crisis and recession. The 2007 recession led to major job losses and raised the regional unemployment rate to 11.7 percent in 2009. As the region enjoyed the longest economic recovery, unemployment declined to 3.0 percent in 2019, the lowest in the entire period. However, regional unemployment rose to 6.7 percent in 2020 due to massive job losses caused by the COVID-19 led recession. The regional unemployment rate has been falling at a slower rate in 2021 as COVID-19 persistence and supply chain backlogs and interruptions continue to limit businesses and the workforce. The persistence of the pandemic and structural changes in the region's economy will remain a challenge over the next few years, especially in areas with low vaccine uptake as well as Black Belt counties.

Nonagricultural employment of the region's residents averaged 115,749 quarterly from the second quarter of 2001 to the first quarter of 2020 (Figure 3.2). The number of jobs declined from 120,705 in the fourth quarter of 2007 to 109,323 in the first quarter of 2010 due to the 2007 recession. Since then nonagricultural employment has been trending up gradually to an all-time high of 126,282 in the fourth quarter 2019 before dropping to about 126,027 in the first quarter of 2020.

Figure 3.3 shows worker distribution by age in West AlabamaWorks for the first quarter of 2020. The region's workforce is younger than Alabama's due to a higher concentration of college students in Tuscaloosa County. Older workers, age 55 and over, are 21.1 percent of the region's nonagricultural employment compared to 22.8 percent for the state. Those who are age 65 and over constitute 5.6 percent of nonagricultural employment versus 6.0 percent for Alabama. Even so, labor force participation of younger residents must increase to meet long term occupational projections for growth and replacement. Otherwise, older workers may have to work longer or the region must invest in attracting new resident workers.

Commuting Patterns

In 2005, about 5,100 more residents commuted out of West AlabamaWorks for work than workers who commuted in (Table 3.2). In 2006, commuter inflow jumped up while outflow shrunk due to economic development successes, reducing net out-commuting to just over 500. However, net commuter outflow has picked up since then and was over 8,400 in 2018. There is significant commuting within the region especially in Tuscaloosa County. About 12,300 of West AlabamaWorks workers commuted from Central Six AlabamaWorks, 5,000 were from North, and 4,700 were from Central. The leading destinations for West AlabamaWorks out-commuters were Central Six (18,500), North (6,000), and Central (4,800). By state over 4,600 workers in-commuted from other states and out of state in-commuters accounted for 6,100 workers. Mississippi accounted for most of in- and out-commuters.

Table 3.2 also shows that one-way average commute distances were down in 2020 from 2019 while commute times rose. This indicates that more workers took longer to commute shorter distances implying that congestion worsened in the region. Congestion is likely going to continue posing challenges in problematic areas such as the Tuscaloosa metropolitan area. This could impede mobility and slow economic development thus regional transportation infrastructure and systems must be maintained and developed to ensure that the flow of goods and movement of workers are not interrupted. Projects such as the ongoing expansion of I-20/I-59 in Tuscaloosa and the anticipated Tuscaloosa Eastern Bypass will improve regional transportation.

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Table 3.2 West AlabamaWorks Commuting Patterns

Year	Inflow	State Outflow
2005	24,026	29,114
2006	28,053	28,565
2007	27,681	35,201
2008	29,335	34,577
2009	27,379	34,848
2010	28,189	35,856
2011	29,328	36,889
2012	29,263	37,792
2013	30,110	38,521
2014	30,933	38,322
2015	29,592	37,364
2016	30,794	38,604
2017	31,421	40,110
2018	32,306	40,721

West ALWorks Counties	Inflow, 2018		Outflow, 2018	
	Number	Percent	Number	Percent
Bibb	2,252	4.8	5,644	10.2
Fayette	1,902	4.1	5,015	9.1
Greene	876	1.9	2,080	3.8
Hale	1,255	2.7	4,509	8.2
Lamar	1,544	3.3	3,428	6.2
Marengo	3,366	7.2	4,066	7.4
Pickens	1,335	2.8	5,361	9.7
Sumter	1,375	2.9	2,219	4.0
Tuscaloosa	32,984	70.3	22,982	41.6

	Percent of Workers					
Average commute time (one-way)	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Less than 20 minutes	47.3	46.8	46.5	47.5	45.5	46.9
20 to 40 minutes	30.8	27.5	26.3	30.0	29.6	27.2
40 minutes to an hour	10.7	13.2	13.6	12.0	11.6	13.3
More than an hour	3.2	3.3	5.5	3.9	5.3	3.8
Average commute distance (one-way)	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Less than 10 miles	39.2	35.8	37.1	38.8	38.1	38.5
10 to 25 miles	34.0	33.5	30.6	29.1	30.3	30.3
25 to 45 miles	18.6	18.6	20.2	19.8	16.8	17.3
More than 45 miles	6.2	8.5	11.1	9.6	12.3	11.7

Note: Rounding errors may be present.
Source: U.S. Census Bureau; Alabama Department of Labor; and Center for Business and Economic Research, The University of Alabama.

Population

Between 2000 and 2010, the West AlabamaWorks population grew by 7.6 percent from 305,545 to 328,717 (Table 3.3). However, the population growth was concentrated in Bibb and Tuscaloosa counties, which had double-digit growth. All the other seven counties lost population by at least 5.7 percent. The region's population growth was slightly faster than Alabama's 7.5 percent. Population growth was fastest in Tuscaloosa County at 18.1 percent and Greene County had the fastest population decline, followed by Lamar and Hale. The 2020 decennial census results show regional population growth of 7.4 percent from 2010, which faster than 5.1 percent growth for the Alabama. However, population grew only in Tuscaloosa County (16.1 percent) and declined in all the other eight. The growth in population in Tuscaloosa County was due to enrollment growth at The University of Alabama. The highest population decline occurred in Greene County followed by Sumter.

Table 3.4 shows the region's population decennial counts, estimates, and projections by age group. The population age 65 and over grew rapidly after 2010, as the first of the baby boom generation turned 65 years old. Growth of the prime working age group (20-64) and youth (0-19) are expected to lag that of the total population and pose a challenge for workforce development. If employment growth outpaces labor force growth, communities that experience rapid job gains may need to consider investments in amenities and infrastructure to attract new residents and commuters.

Table 3.3 West AlabamaWorks Population

	1990 Census	2000 Census	2010 Census	2020 Census	Change, 2000-2010		Change, 2010-2020	
					Number	Percent	Number	Percent
Bibb	16,576	20,826	22,915	22,293	2,089	10.0	-622	-2.7
Fayette	17,962	18,495	17,241	16,321	-1,254	-6.8	-920	-5.3
Greene	10,153	9,974	9,045	7,730	-929	-9.3	-1,315	-14.5
Hale	15,498	17,185	15,760	14,785	-1,425	-8.3	-975	-6.2
Lamar	15,715	15,904	14,564	13,972	-1,340	-8.4	-592	-4.1
Marengo	23,084	22,539	21,027	19,323	-1,512	-6.7	-1,704	-8.1
Pickens	20,699	20,949	19,746	19,123	-1,203	-5.7	-623	-3.2
Sumter	16,174	14,798	13,763	12,345	-1,035	-7.0	-1,418	-10.3
Tuscaloosa	150,522	164,875	194,656	227,036	29,781	18.1	32,380	16.6
West ALWorks	286,383	305,545	328,717	352,928	23,172	7.6	24,211	7.4
Alabama	4,040,587	4,447,100	4,779,736	5,024,279	332,636	7.5	244,543	5.1
United States	248,709,873	281,421,906	308,745,538	331,449,281	27,323,632	9.7	22,703,743	7.4

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

Table 3.4 Population by Age Group and Projections

Age Group	2000	2010	2018	2028	2030	2035	2040
0-19	88,693	88,329	87,044	92,896	93,713	96,204	100,216
20-24	27,736	35,212	33,867	40,523	40,947	43,297	44,765
25-29	21,054	21,426	26,797	24,453	24,852	25,706	27,853
30-34	19,433	19,527	21,355	23,504	23,713	25,034	26,115
35-39	21,196	19,922	21,120	22,311	23,194	24,070	25,461
40-44	22,427	19,282	19,488	21,228	21,365	23,792	24,766
45-49	21,244	21,530	20,775	20,924	21,601	22,040	24,521
50-54	18,401	22,303	20,321	20,281	20,160	22,034	22,557
55-59	14,192	21,082	21,938	20,375	20,688	20,562	22,558
60-64	12,265	17,685	21,475	20,424	19,828	20,762	20,649
65+	38,904	42,419	53,905	70,203	73,109	77,307	80,817
20-64 Total	**177,948**	**197,969**	**207,137**	**214,023**	**216,349**	**227,297**	**239,245**
Total Population	**305,545**	**328,717**	**348,086**	**377,122**	**383,171**	**400,808**	**420,278**
Change from 2018							
0-19				6.7%	7.7%	10.5%	15.1%
20-64				3.3%	4.4%	9.7%	15.5%
Total Population				8.3%	10.1%	15.1%	20.7%

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

Educational Attainment

Educational attainment in 2015 to 2019 of West AlabamaWorks residents who were 25 years old and over is shown in Table 3.5 and Figure 3.6. The regional educational attainment is lower than that of Alabama for both high school graduates or higher and bachelor's degree or higher. Of the region's residents 25 years old and over, 85.9 percent graduated from high school and 23.8 percent held a bachelor's or higher degree compared to the state's 86.2 percent for high school diploma and 25.5 percent for bachelor's degree or higher. Tuscaloosa County had higher educational attainment than the other eight counties, the region, and the state as a whole. Green County had the lowest educational attainment followed by Lamar for high school diploma and Pickens for bachelor's degree or higher. Educational attainment is important as skills rise with education and high-wage jobs for the 21st century demand more skill sets.

Underemployment and Available Labor

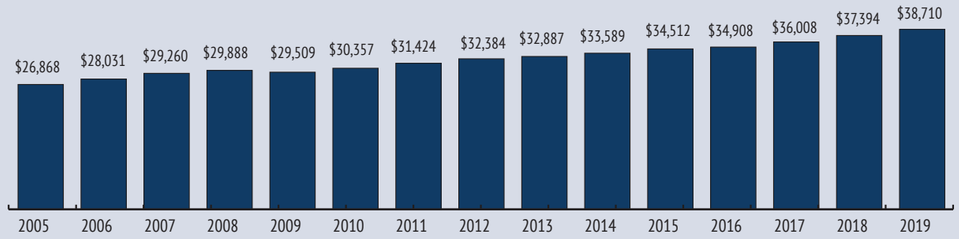
Labor force data are often limited to information on the employed and the unemployed that is available from government sources. However, this information is not complete from the perspective of employers. New or expanding employers are also interested in underemployment because current workers are potential employees. In fact, experience requirements in job ads are evidence that many prospective employers look beyond the unemployed for workers.

Workers in occupations that underutilize their experience, training, and skills are underemployed. These workers might look for other work because their current wages are below what they believe they can earn or they do not wish to stay underemployed. Underemployment occurs for various reasons including productivity growth, spousal employment and income, and family constraints or personal

Per Capita Income

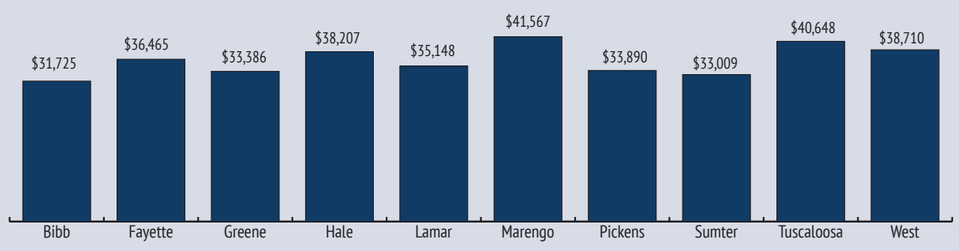
Per capita income (PCI) in West AlabamaWorks was at $38,710 in 2019 (Figure 3.4), up 44.1 percent from 2005, and $5,435 below the state average of $44,145. The 2019 PCI by county is also presented in Figure 3.5. Per capita income was below the state average in all the nine counties. Marengo County had the highest PCI with $41,567 followed by Tuscaloosa at $40,710. Bibb County had the lowest PCI at $31,725 followed by Sumter with $33,009.

Figure 3.4 West AlabamaWorks Per Capita Income



Source: U.S. Bureau of Economic Analysis and Center for Business and Economic Research, The University of Alabama.

Figure 3.5 West AlabamaWorks County Per Capita Income, 2019



Source: U.S. Bureau of Economic Analysis and Center for Business and Economic Research, The University of Alabama.

preferences. Underemployment is unique to areas because of the various contributing factors combined with each area's economic, social, and geographic characteristics.

The existence of underemployment identifies economic potential that is not being realized. It is extremely difficult to measure this economic potential because of uncertainties regarding additional income that the underemployed can bring to an area. It is clear, however, that underemployment provides opportunities for selective job creation and economic growth. A business that needs skills prevalent among the underemployed could locate in places that have such workers regardless of those areas' unemployment rates. A low unemployment rate, which may falsely suggest limited labor availability, is therefore not a hindrance to the business.

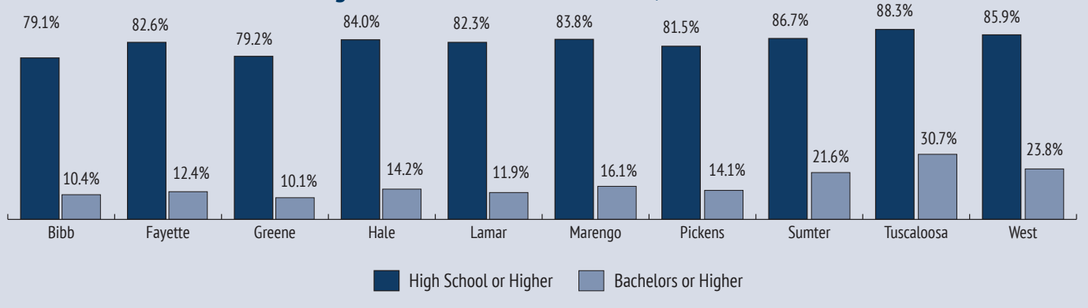
The underemployed present a significant labor pool because they tend to respond to job opportunities that they believe are better for reasons that include (i) higher income, (ii) more benefits, (iii) superior terms and conditions of employment, and (iv) a better match with skills, training, and experience. The underemployed also create opportunities for entry-level workers as they leave lower-paying jobs for better-paying ones. Even if their previously-held positions are lost or not filled (perhaps due to low unemployment or adverse economic conditions), there is economic growth in gaining higher-paying jobs. Such income growth boosts consumption, savings, and tax collections. Quantifying the size of the underemployed is a necessary first step in considering this group for economic development, workforce training, planning, and other purposes. It is

Table 3.5 Educational Attainment of Population 25 Years and Over, 2015-2019

	Bibb	Fayette	Greene	Hale	Lamar	Marengo	Pickens	Sumter	Tuscaloosa	West
Total	16,168	11,706	5,793	9,921	9,837	13,092	14,495	8,088	129,056	218,156
No schooling completed	418	193	118	140	58	261	389	13	1,587	3,177
Nursery to 4th grade	33	75	18	48	52	70	40	21	270	627
5th and 6th grade	187	40	73	17	44	56	170	97	553	1,237
7th and 8th grade	410	533	138	252	499	300	264	171	1,650	4,217
9th grade	411	323	88	255	280	138	346	227	1,928	3,996
10th grade	628	199	107	249	321	522	477	189	2,709	5,401
11th grade	932	428	506	535	308	421	641	235	3,662	7,668
12th grade, no diploma	367	246	156	91	175	350	353	123	2,677	4,538
High school graduate/equivalent	7,256	4,831	2,237	4,303	3,912	4,970	5,388	2,860	38,580	74,337
Some college, less than 1 year	761	973	219	453	535	942	892	355	6,647	11,777
Some college, 1+ years, no degree	1,898	1,622	1,186	1,426	1,611	1,783	2,429	1,538	20,356	33,849
Associate degree	1,189	792	361	741	868	1,170	1,059	515	8,777	15,472
Bachelor's degree	1,043	1,062	353	925	818	1,136	1,444	921	23,726	31,428
Master's degree	488	319	171	344	279	816	485	696	10,933	14,531
Professional school degree	80	38	25	90	54	78	88	71	2,038	2,562
Doctorate degree	67	32	37	52	23	79	30	56	2,963	3,339

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau, American Community Survey.

Figure 3.6 Educational Attainment, 2015-2019



Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau, American Community Survey.

important to note that the underemployed can take on more responsibilities and earn more income, but they cannot be counted on to address possible future worker shortages as they are already employed.

West AlabamaWorks region had an underemployment rate of 25.6 percent in 2020/2021. Applying this rate to March 2021 labor force data means that 36,728 employed residents were underemployed (Table 3.6). Adding the unemployed gives a total available labor pool of 42,225 for the region. This is 7.7 times the number of unemployed persons and is a more realistic measure of the available labor pool in the region. Prospective employers must be able to offer the underemployed workers higher wages, better benefits or terms of employment, or some other incentives to induce them to change jobs. County underemployment rates ranged from 19.5 percent for Marengo County to 32.2 percent for Hale. Greene County had the smallest available labor pool and Tuscaloosa had the largest. The underemployed are more willing to commute longer and farther a better job. For one-way commute, 45.2 percent are prepared to travel for 20 or more minutes longer and 41.8 percent will go 20 or more extra miles for a better job. In contrast, 43.0 percent of all workers will go 20 or more minutes and 33.5 percent will commute 20 or more extra miles for the same.

Underemployment rates for counties, AlabamaWorks regions, and the state were determined from an extensive survey on the state's workforce. A total of 1,258 complete responses were obtained from West AlabamaWorks. More than half of the respondents (683) were employed, of whom 175 stated that they were underemployed. A lack of job opportunities in their area, low wages at available jobs, living too far from jobs, other family or personal obligations, owning a house in the area, childcare responsibilities, and spouse having a really good job are the primary reasons given for being underemployed. Ongoing economic development efforts can help in this regard. Nonworkers cite retirement and disability or other health concerns as the main reasons for their status, but some also cite social security limitations, low wages at the available, living too far from jobs, and a lack of job opportunities in their area as additional major reasons. Such workers may become part of the labor force if these issues can be addressed. Indeed, a recent study found that the flow of labor force nonparticipants to employment status was 60.0 percent more than that of unemployed workers who gain employment.[3] This implies that the region's available labor pool could be larger than estimated in this report.

A comparison of underemployed workers to the overall workforce in West AlabamaWorks shows that:

- Fewer work full-time and more of the part-timers would like to work full-time.
- More hold multiple jobs.
- They commute longer times, but travel shorter distances.
- More work in computer and mathematical; life, physical, and social science; community and social services; education, training, and library; arts, design, entertain, sports, and media; healthcare practitioners and technical; food preparation and service related; building and grounds cleaning and maintenance; sales and related; and office and administrative support occupations.
- By industry more are in wholesale trade; retail trade; management of companies; administrative and support and waste management and remediation; educational services; arts, entertainment, and recreation; and accommodation and food services.
- They earn less and have shorter job tenure.
- More were laid-off or furloughed from their jobs in the past 3 months and fewer have been recalled to work.
- Fewer believe their jobs fit well with their education, training and skills, and more believe they are qualified for a better job.
- More would leave their current jobs for higher income.
- More are willing to commute farther and longer for a better job.
- Fewer are satisfied with their current jobs.
- More are willing to train for a better job, even when they have to pay the full cost of training.
- More have sought better jobs in the preceding quarter.
- They are more educated; more have associate, bachelors, and postgraduate degrees.
- Fewer are married and more are women.
- Their median age is 50 years, the same as all employees.
- More are African-American or other nonwhite racial groups.
- Fewer are Hispanic.

Table 3.6 Underemployed and Available Labor by County

	West	Bibb	Fayette	Greene	Hale	Lamar	Marengo	Pickens	Sumter	Tuscaloosa
Labor force	148,853	8,526	6,483	2,838	5,733	5,626	7,437	7,456	4,550	100,204
Employed	143,356	8,236	6,281	2,635	5,415	5,462	7,121	7,157	4,358	96,691
Underemployment rate	25.6%	23.7%	27.4%	25.5%	32.2%	20.3%	19.5%	25.0%	24.6%	29.9%
Underemployed workers	36,728	1,953	1,721	673	1,744	1,111	1,389	1,789	1,070	28,940
Unemployed	5,497	290	202	203	318	164	316	299	192	3,513
Available labor pool	**42,225**	**2,243**	**1,923**	**876**	**2,062**	**1,275**	**1,705**	**2,088**	**1,262**	**32,453**

Note: Rounding errors may be present. Based on March 2021 labor force data and 2020/2021 underemployment rates.
Source: Center for Business and Economic Research, The University of Alabama and Alabama Department of Labor.

[3] Canon, M.E., Kudlyak, M., and Reed, M. (2014). Not Everyone Who Joins the Ranks of the Employed was "Unemployed", *The Regional Economist*, January.

Table 3.7 shows the detailed survey results on job satisfaction and willingness to train. Responses for overall job satisfaction as well as various aspects of the job were obtained. In general, most of the region's workers (80.5 percent) are satisfied or completely satisfied with their jobs. Workers are most satisfied with the work they do and least satisfied with the earnings they receive. Fewer underemployed workers are satisfied with their jobs (60.0 percent). The underemployed are most satisfied with the work they do and their work shift and much less dissatisfied with their earnings.

Workers are generally willing to train for a new or better job, with the underemployed being much more willing (71.0 percent vs. 58.0 percent). However, the willingness to train is strongly influenced by who pays for the cost of training. Workers typically do not wish to pay for the training and so their willingness is highest when the cost is fully borne by the government and lowest when the trainee must pay the full costs. The underemployed are more willing to train for the new or better job even when they have to pay for the full cost of training. The results strongly show that workers expect the government to bear at least a part of the training cost. This expectation may result from worker awareness of government workforce programs that provide such assistance.

Table 3.7 Job Satisfaction and Willingness to Train (Percent)

	Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied
Job Satisfaction					
Employed					
Overall	3.9	4.2	13.2	27.0	51.7
Earnings	10.2	9.9	19.9	26.3	33.3
Retention	3.7	3.9	8.3	19.4	64.2
Work	1.6	2.8	4.6	26.3	64.7
Hours	5.1	5.1	8.6	25.2	55.4
Shift	2.5	3.7	7.9	21.3	64.4
Conditions	4.6	5.3	10.6	25.2	54.0
Commuting Distance	5.1	3.7	13.9	14.3	62.8
Underemployed					
Overall	7.5	10.0	25.0	21.7	35.8
Earnings	17.5	15.8	27.5	23.3	15.0
Retention	6.7	8.3	18.3	18.3	51.7
Work	3.3	4.2	9.2	30.8	52.5
Hours	10.8	9.2	10.8	24.2	44.2
Shift	4.2	6.7	14.2	24.2	50.8
Conditions	10.0	10.0	12.5	25.8	40.8
Commuting Distance	7.5	5.0	14.2	15.0	58.3

	Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing
Willingness to Train					
Employed					
For a new or better job	22.3	5.1	15.5	9.6	47.0
If paid by trainee	40.6	20.7	21.4	4.4	10.1
If paid by trainee and government	9.4	14.5	31.2	22.8	19.9
If paid by government	2.5	2.2	9.1	14.9	70.7
Underemployed					
For a new or better job	17.5	4.9	7.8	13.6	55.3
If paid by trainee	34.1	21.2	17.7	10.6	11.8
If paid by trainee and government	8.2	12.9	23.5	28.2	25.9
If paid by government	2.4	1.2	4.7	11.8	80.0

Note: Rounding errors may be present.
Source: Center for Business and Economic Research, The University of Alabama.

WORKFORCE DEMAND

Industry Mix

The manufacturing sector was the leading employer with 22,825 jobs in the first quarter of 2020 (Table 3.8). Rounding out the top five industries by employment are health care and social assistance; educational services; retail trade; and accommodation and food services. These five industries provided 80,282 jobs, 63.7 percent of the regional total. The average monthly wage across all industries in the region was $4,129; two leading employers—manufacturing and educational services—paid more. The highest average monthly wages were for utilities at $8,625; management of companies and enterprises at $8,452; manufacturing at $5,789; mining at $5,628; wholesale trade at $5,349; and professional, scientific and technical services with $4,851. At $1,697, accommodation and food services paid the least. New hire monthly earnings averaged $2,559, 62.0 percent of the region's average monthly wage. Construction had the highest average monthly new hire wages with $4,070, followed by mining trade at $3,997 and manufacturing with $3,837. Accommodation and food services paid newly hired workers the least with $1,175.

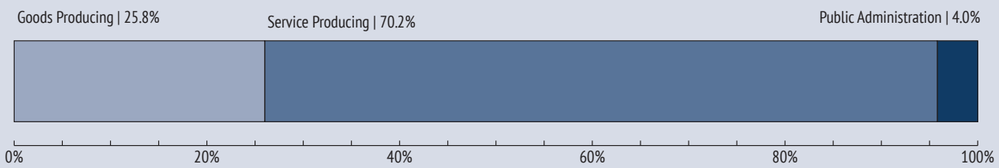
By broad industry classification, service providing industries generated 70.2 percent of jobs in first quarter 2020 (Figure 3.7). Goods producing industries were next with 25.8 percent and public administration accounted for 4.0 percent. The distribution is for all nonagricultural jobs in the West AlabamaWorks region, but there is significant variation by county.

Table 3.8 Industry Mix (First Quarter 2020)

Industry by 2-digit NAICS Code	Total Employment	Share	Rank	Average Monthly Wage	Average Monthly New Hire Earnings
11 Agriculture,Forestry,Fishing and Hunting	1,530	1.21%	16	$3,654	$2,511
21 Mining	1,450	1.15%	17	$5,628	$3,997
22 Utilities	576	0.46%	20	$8,625	$3,795
23 Construction	6,684	5.30%	7	$4,414	$4,070
31-33 Manufacturing	22,825	18.1%	1	$5,789	$3,837
42 Wholesale Trade	2,445	1.9%	13	$5,349	$3,543
44-45 Retail Trade	13,472	10.7%	4	$2,653	$1,572
48-49 Transportation and Warehousing	4,453	3.5%	9	$4,192	$3,082
51 Information	1,756	1.4%	15	$4,846	$3,171
52 Finance and Insurance	3,361	2.7%	11	$5,486	$3,334
53 Real Estate and Rental and Leasing	1,980	1.6%	14	$3,474	$2,732
54 Professional,Scientific,and Technical Services	3,701	2.9%	10	$4,851	$3,015
55 Management of Companies and Enterprises	594	0.5%	19	$8,452	$3,003
56 Administrative and Support and Waste Management and Remediation Services	8,325	6.6%	6	$3,178	$2,604
61 Educational Services	15,871	12.6%	3	$4,183	$2,004
62 Health Care and Social Assistance	16,629	13.2%	2	$3,702	$2,467
71 Arts,Entertainment,and Recreation	1,302	1.0%	18	$1,817	$1,289
72 Accommodation and Food Services	11,485	9.1%	5	$1,697	$1,175
81 Other Services (except Public Administration)	2,558	2.0%	12	$3,010	$2,016
92 Public Administration	5,031	3.99%	8	$4,093	$2,856
ALL INDUSTRIES	**126,027**	**100.00%**		**$4,129**	**$2,559**

Note: Rounding errors may be present.
Source: Alabama Department of Labor and U.S. Census Bureau.

Figure 3.7 West AlabamaWorks Employment Distribution (First Quarter 2020)

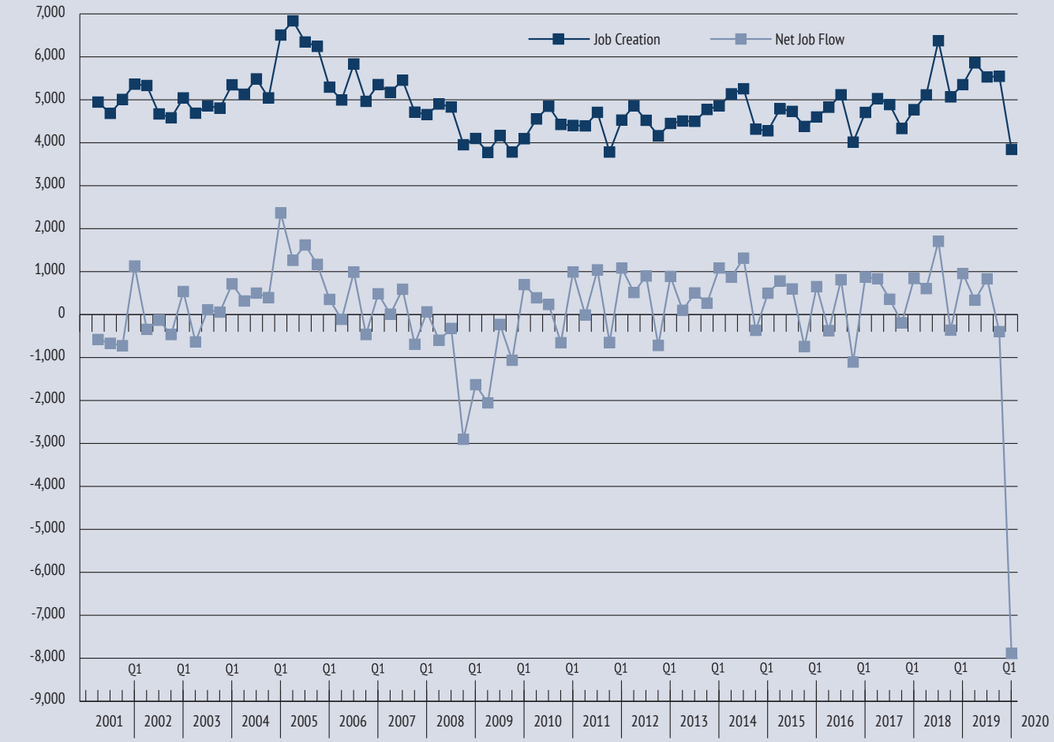


Source: Alabama Department of Labor and U.S. Census Bureau.

Job Creation and Net Job Flows

On average, 4,883 jobs were created per quarter from second quarter 2001 to first quarter 2020 and quarterly net job flows averaged 94 (Figure 3.8). Both job creation and net job flows have been somewhat flat for over a decade but they drastically declined in the first quarter of 2020 due to the onset of the COVID-19 pandemic and the associated recession. Quarterly net job flows fluctuated from a gain of 2,365 in the first quarter of 2005 to a loss of 7,886 in the first quarter of 2020. Job creation refers to the number of new jobs that are created either by new area businesses or through the expansion of existing firms. Net job flows reflect the difference between current and previous employment at all businesses.

Figure 3.8 West AlabamaWorks Job Creation and Net Job Flows



Source: Alabama Department of Labor and U.S. Census Bureau.

High-Demand, Fast-Growing, High-Earning, and Sharp-Declining Occupations

West AlabamaWorks had 653 single occupations excluding occupational categories. Table 3.9 shows the 40 occupations that are expected to be in high-demand, ranked by projected average annual job openings over the 2018 to 2028 period. These occupations are in several employment sectors ranging from manufacturing, health care and social assistance, to transportation and warehousing. Some of these sectors such as manufacturing will continue to dominate employment in the region.

The top five high-demand occupations are Combined Food Preparation and Serving Workers, Including Fast Food; Assemblers and Fabricators, All Other, Including Team Assemblers; Retail Salespersons; Laborers and Freight, Stock, and Material Movers, Hand; and Heavy and Tractor-Trailer Truck Drivers. Seven of the high-demand occupations are also fast-growing. This means that these seven occupations have a minimum annual growth rate of 1.45 percent, much faster than the overall 0.32 percent average occupational growth rate for the region and 0.48 percent for Alabama.

The top 20 fastest growing occupations ranked by projected growth of employment are listed in Table 3.10. Most of these occupations are related to manufacturing and health care and social assistance. The top five fast-growing occupations are Occupational Therapy Assistants; Rail-Track Laying and Maintenance Equipment Operators; Physician Assistants; Industrial Engineers; and Home Health Aides.

Table 3.11 shows the top 50 selected highest earning occupations in the region. These occupations are mainly in management, health, postsecondary education, and engineering fields and have a minimum mean salary of $90,335. Eight of the top 10 listed are health occupations and the remaining are in engineering and management. Any discussion of earnings must consider that wages vary with experience. Occupations with the highest average wages may not necessarily have the highest entry wages for inexperienced workers.

The selected top high-earning occupations are generally not fast-growing or in high-demand. Seven occupations are both high-earning and in high-demand (Table 3.11 and Table 3.9) and five are both high-earning and fast-growing (Table 3.11 and Table 3.10). Four occupations—Industrial Production Managers; Financial Managers; Nurse Practitioners; and Industrial Engineers—are in high-demand, fast-growing, and high-earning (Table 3.9, Table 3.10 and Table 3.11).

Of the region's 653 occupations, 138 are expected to decline over the 2018 to 2028 period. Employment in the 20 sharpest-declining occupations will fall by at least two percent, with each losing a minimum of 10 jobs (for those with disclosed net change) over the period (Table 3.12). No efforts should be made to sustain these occupations because their decline is due to structural changes in the economy of the region.

Table 3.9 Selected High-Demand Occupations (Base Year 2018 and Projected Year 2028)

Occupation	Average Annual Job Openings		
	Total	Due to Growth	Due to Separations
Combined Food Preparation and Serving Workers, Including Fast Food	725	30	695
Assemblers and Fabricators, All Other, Including Team Assemblers	645	45	600
Retail Salespersons	430	5	420
Laborers and Freight, Stock, and Material Movers, Hand	365	5	355
Heavy and Tractor-Trailer Truck Drivers	285	10	275
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	285	10	280
Helpers--Production Workers	275	20	250
Registered Nurses	220	25	195
Nursing Assistants	210	10	200
Stock Clerks and Order Fillers	210	5	200
Cooks, Restaurant	195	15	185
Landscaping and Groundskeeping Workers	195	10	190
Personal Care Aides	190	15	175
Industrial Machinery Mechanics*	180	25	155
General and Operations Managers	**145**	**10**	**140**
Elementary School Teachers, Except Special Education	130	5	120
Construction Laborers	115	5	110
First-Line Supervisors of Construction Trades and Extraction Workers	115	5	110
Maintenance and Repair Workers, General	115	5	110
Industrial Truck and Tractor Operators	110	5	105
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	100	10	90
Sawing Machine Setters, Operators, and Tenders, Wood	100	5	95
Licensed Practical and Licensed Vocational Nurses	95	5	90
First-Line Supervisors of Production and Operating Workers	95	5	90
Accountants and Auditors	95	5	85
Welders, Cutters, Solderers, and Brazers	75	5	70
Electricians	75	5	75
Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	75	5	75
Home Health Aides*	70	10	60
Industrial Engineers*	**70**	**20**	**50**
Medical Assistants	60	5	55
Postsecondary Teachers, All Other	**60**	**5**	**55**
Fitness Trainers and Aerobics Instructors	50	5	45
Educational, Guidance, School, and Vocational Counselors	45	5	45
Computer User Support Specialists	40	5	40
Education Administrators, Postsecondary	**40**	**5**	**40**
Taxi Drivers and Chauffeurs*	25	5	20
Industrial Production Managers*	**25**	**5**	**20**
Financial Managers*	**25**	**5**	**20**
Nurse Practitioners*	**20**	**5**	**15**

Note: Occupations are growth- and wages weighted and data are rounded to the nearest 5. Occupations in bold are also high-earning.
* Qualify as both high-demand and fast-growing occupations.
Source: Alabama Department of Labor and Center for Business and Economic Research, The University of Alabama.

Table 3.10 Selected Fast-Growing Occupations (Base Year 2018 and Projected Year 2028)

Occupation	Employment		Percent Change	Annual Growth (Percent)
	2018	2028		
Occupational Therapy Assistants	NA	NA	36.00	3.12
Rail-Track Laying and Maintenance Equipment Operators	NA	NA	31.58	2.78
Physician Assistants	**30**	**40**	**29.41**	**2.61**
Industrial Engineers*	**670**	**840**	**26.58**	**2.38**
Home Health Aides*	450	570	26.27	2.36
Cargo and Freight Agents	70	80	24.62	2.23
Floor Layers, Except Carpet, Wood, and Hard Tiles	NA	NA	23.08	2.10
Speech-Language Pathologists	100	120	20.79	1.91
Taxi Drivers and Chauffeurs*	190	230	20.21	1.86
Nurse Practitioners*	**250**	**300**	**19.28**	**1.78**
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	70	90	17.81	1.65
Industrial Production Managers*	**260**	**310**	**17.80**	**1.65**
Industrial Machinery Mechanics*	1,550	1,810	16.93	1.58
Software Developers, Applications	NA	NA	16.88	1.57
Logisticians	100	110	16.84	1.57
Financial Managers*	**240**	**270**	**16.60**	**1.55**
Respiratory Therapists	190	220	16.23	1.52
Helpers--Extraction Workers	NA	NA	16.22	1.51
Roof Bolters, Mining	NA	NA	15.63	1.46
Continuous Mining Machine Operators	NA	NA	15.52	1.45

Note: Employment data are rounded to the nearest 10 and job openings are rounded to the nearest 5. Occupations in bold are also high-earning.
* Qualify as both high-demand and fast-growing occupations.
Source: Alabama Department of Labor and Center for Business and Economic Research, The University of Alabama.

Table 3.11 Selected High-Earning Occupations (Base Year 2018 and Projected Year 2028)

Occupation	Employment 2018	Employment 2028	Annual Growth (Percent)	Average Annual Job Openings	Mean Annual Salary ($)
Physicians and Surgeons, All Other	390	410	0.28	15	216,307
Family and General Practitioners	90	90	0.44	5	204,452
Psychiatrists	30	30	-0.33	0	193,929
Nurse Anesthetists	50	60	1.27	5	183,643
Personal Financial Advisors	90	100	0.21	5	170,777
Training and Development Managers	NA	NA	0.96	0	152,839
Pharmacists	320	320	-0.16	15	151,269
Computer Science Teachers, Postsecondary	80	90	0.82	10	150,364
Business Teachers, Postsecondary	120	140	1.94	15	139,529
Petroleum Engineers	30	30	0.00	0	132,013
Chief Executives	130	120	-1.06	5	131,427
Postsecondary Teachers, All Other*	650	700	0.74	60	131,369
Computer and Information Systems Managers	100	110	1.10	10	121,776
Education Administrators, Postsecondary*	470	510	0.91	40	121,319
Natural Sciences Managers	NA	NA	0.00	0	120,498
Dentists, General	80	80	0.49	5	119,835
Financial Managers*	240	270	1.55	25	119,604
Veterinarians	40	40	0.78	0	118,290
Chiropractors	30	30	0.35	0	118,078
Chemical Engineers	30	30	0.00	0	112,570
Architects, Except Landscape and Naval	60	60	0.68	5	112,124
Architectural and Engineering Managers	130	140	0.88	10	111,321
Computer Network Architects	NA	NA	0.00	0	110,681
Purchasing Managers	20	20	0.51	0	110,478
Industrial Production Managers*	260	310	1.65	25	110,042
General and Operations Managers*	1,530	1,630	0.63	145	108,369
Library Science Teachers, Postsecondary	NA	NA	0.80	5	107,743
Sales Managers	140	150	0.28	15	105,475
Human Resources Managers	80	80	0.77	10	103,359
Transportation, Storage, and Distribution Managers	NA	NA	0.84	0	103,173
Electronics Engineers, Except Computer	NA	NA	0.00	0	102,801
Administrative Services Managers	40	40	0.25	5	102,691
Business Operations Specialists, All Other	140	140	0.00	15	101,616
Managers, All Other	530	550	0.22	40	101,531
Physical Therapists	150	170	1.30	10	100,949
Nurse Practitioners*	250	300	1.78	20	100,283
Construction Managers	320	330	0.50	25	99,916
Environmental Engineers	50	50	0.61	5	99,792
Electrical Engineers	110	120	0.87	10	98,909
Computer Systems Analysts	120	130	0.47	10	96,250
Medical and Health Services Managers	220	240	0.80	20	95,874
Marketing Managers	50	50	0.98	5	95,332

Table 3.11 Selected High-Earning Occupations (Base Year 2018 and Projected Year 2028)(continued)

Appraisers and Assessors of Real Estate	70	80	0.40	5	93,183
Nursing Instructors and Teachers, Postsecondary	120	140	1.99	15	91,934
Industrial Engineers*	670	840	2.38	70	91,818
History Teachers, Postsecondary	60	60	0.84	5	91,698
Mechanical Engineers	170	190	1.07	15	91,385
Psychologists, All Other	10	10	0.00	0	91,185
Physician Assistants	30	40	2.61	5	91,101
Chemistry Teachers, Postsecondary	60	60	0.84	5	90,335

Note: Employment and salaries data are rounded to the nearest 10; job openings to the nearest 5. The salary data provided are based on the May 2019 release of the Occupational Employment Statistics (OES) combined employment and wage file. Estimates for specific occupations may include imputed data.
* Qualify as both high-earning and high-demand occupations. NA – Not available due to disclosure limitations.
Source: Center for Business and Economic Research, The University of Alabama and Alabama Department of Labor.

Table 3.12 Selected Sharp-Declining Occupations (Base Year 2018 and Projected Year 2028)

Occupation	Employment 2018	Employment 2028	Net Change	Percent Change
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	3,250	2,940	-310	-9.54
Office Clerks, General	2,220	2,080	-140	-6.17
Cashiers	4,900	4,780	-120	-2.47
Inspectors, Testers, Sorters, Samplers, and Weighers	720	630	-90	-12.80
Bookkeeping, Accounting, and Auditing Clerks	1,540	1,470	-70	-4.67
Driver/Sales Workers	540	480	-60	-11.42
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	1,740	1,680	-60	-3.68
Executive Secretaries and Executive Administrative Assistants	210	170	-40	-18.31
Computer Programmers	480	440	-40	-9.11
Tellers	510	470	-40	-8.06
Legal Secretaries	150	120	-30	-21.48
Data Entry Keyers	130	100	-30	-21.43
Logging Equipment Operators	410	380	-30	-7.79
Claims Adjusters, Examiners, and Investigators	70	50	-20	-21.21
Mail Clerks and Mail Machine Operators, Except Postal Service	110	90	-20	-15.09
Reporters and Correspondents	60	50	-10	-20.63
Computer Operators	50	40	-10	-22.22
Cooks, Fast Food	NA	NA	NA	-17.59
Forging Machine Setters, Operators, and Tenders, Metal and Plastic	NA	NA	NA	-17.84
Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	NA	NA	NA	-12.54

Note: Employment data are rounded to the nearest 10.
Source: Alabama Department of Labor and Center for Business and Economic Research, The University of Alabama.

Skills and Skills Gap Analyses

Jobs require skill sets and it is necessary that jobholders have the relevant skills. Table 3.13 shows skill types and definitions as provided by O*NET Online, which offers skill sets for all occupations ranked by the degree of importance. High-earning occupations typically require skills that are obtained in the pursuit of the high educational attainment levels that such jobs require. Lower earning occupations require more basic skill sets. Some occupations have no minimum skill set requirements (e.g., dishwashers and maids).

Table 3.14 shows the percentage of selected occupations in the region that list a particular skill as primary. We define primary skills as the 10 most important skills in the required skill set for an occupation. It is important to note that a particular skill may be more important and more extensively used in one occupation than another. Table 3.14 does not address such cross-occupational skill importance comparisons. In general, basic skills are most frequently listed as primary, which means that they are important for practically all jobs.

High-earning occupations require more active learning, critical thinking, learning strategies, math, reading comprehension, science, speaking, writing, complex problem solving, management of financial resources, personnel resources management, negotiation, persuasion, judgment and decision making, systems analysis, systems evaluation, and operations analysis skills than both high-demand and fast-growing jobs. Most of these skills require long training periods and postsecondary education. However, high-earning jobs require less technical skills than both high-demand and fast-growing occupations. High-demand occupations require more resource management skills than fast-growing occupations and less basic, complex problems solving, technical, and systems skills.

Table 3.15 shows skill gap indexes for all 35 skills in Table 3.13 based on 2018 to 2028 occupational projections. Skills gap indexes range up to 100 and are standardized measures of the gap between current supply and projected demand. The index does not provide any information about current or base year skill supply. Its focus is on the projection period and identifies critical skill needs. The index essentially ranks expected training needs. The higher the index the more critical the skill over the specified projection period and a higher skill gap index indicates the need to increase the scale of training.

For policy and planning purposes, skill gap indexes have to be considered together with replacement indexes, which are the expected shares of job openings due to replacement. Replacement is necessary because of turnover and people leaving the labor force. The smaller the replacement index, the larger the share of job openings due to growth, which in turn implies a need to increase the pace of skill training. Skill gap indexes demonstrate the need to ramp up the scale of skill training while replacement indexes address the pace of training.

By skill type the skill gap indexes show that basic skills are most critical followed by social, complex problem solving, resource management, systems, and technical skills. The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs in particular indicates a strong need for training in these skills. The pace of training needs to increase for technical, complex problem solving, and basic (science) skills; the scale of training should be raised for basic and social skills.

Table 3.13 Skill Types and Definitions

Basic Skills: Developed capacities that facilitate learning or the more rapid acquisition of knowledge.

- Active Learning – Understanding the implications of new information for both current and future problem-solving and decision-making.
- Active Listening – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- Critical Thinking – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.
- Learning Strategies – Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.
- Mathematics – Using mathematics to solve problems.
- Monitoring – Monitoring / Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- Reading Comprehension – Understanding written sentences and paragraphs in work-related documents.
- Science – Using scientific rules and methods to solve problems.
- Speaking – Talking to others to convey information effectively.
- Writing – Communicating effectively in writing as appropriate for the needs of the audience.

Complex Problem Solving Skills: Developed capacities used to solve novel, ill-defined problems in complex, real-world settings.

- Complex Problem Solving – Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Resource Management Skills: Developed capacities used to allocate resources efficiently.

- Management of Financial Resources – Determining how money will be spent to get the work done and accounting for these expenditures.
- Management of Material Resources – Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.
- Management of Personnel Resources – Motivating, developing, and directing people as they work, identifying the best people for the job.
- Time Management – Managing one's own time and the time of others.

Social Skills: Developed capacities used to work with people to achieve goals.

- Coordination – Adjusting actions in relation to others' actions.
- Instructing – Teaching others how to do something.
- Negotiation – Bringing others together and trying to reconcile differences.
- Persuasion – Persuading others to change their minds or behavior.
- Service Orientation – Actively looking for ways to help people.
- Social Perceptiveness – Being aware of others' reactions and understanding why they react as they do.

Systems Skills: Developed capacities used to understand, monitor, and improve socio-technical systems.

- Judgment and Decision Making – Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- Systems Analysis – Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
- Systems Evaluation – Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.

Technical Skills: Developed capacities used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems.

- Equipment Maintenance – Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
- Equipment Selection – Determining the kind of tools and equipment needed to do a job.
- Installation – Installing equipment, machines, wiring, or programs to meet specifications.
- Operation and Control – Controlling operations of equipment or systems.
- Operation Monitoring – Watching gauges, dials, or other indicators to make sure a machine is working properly.
- Operations Analysis – Analyzing needs and product requirements to create a design.
- Programming – Writing computer programs for various purposes.
- Quality Control Analysis – Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
- Repairing – Repairing machines or systems using the needed tools.
- Technology Design – Generating or adapting equipment and technology to serve user needs.
- Troubleshooting – Determining causes of operating errors and deciding what to do about it.

Source: O*NET Online (http://online.onetcenter.org/skills/).

Table 3.14 Percentage of Selected Occupations for Which Skill Is Primary

	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
Basic Skills			
Active Learning	28	35	60
Active Listening	68	85	82
Critical Thinking	65	75	82
Learning Strategies	3	5	14
Mathematics	3	5	10
Monitoring	60	75	56
Reading Comprehension	43	60	82
Science	3	5	14
Speaking	63	70	80
Writing	18	15	58
Complex Problem Solving Skills			
Complex Problem Solving	23	45	62
Resource Management Skills			
Management of Financial Resources	0	0	2
Management of Material Resources	0	0	0
Management of Personnel Resources	8	5	14
Time Management	35	25	22
Social Skills			
Coordination	43	45	26
Instructing	18	5	16
Negotiation	5	5	10
Persuasion	5	5	8
Service Orientation	28	35	18
Social Perceptiveness	38	45	30
Systems Skills			
Judgment and Decision Making	25	40	66
Systems Analysis	5	10	12
Systems Evaluation	0	5	8
Technical Skills			
Equipment Maintenance	10	20	0%
Equipment Selection	5	10	0
Installation	3	0	0
Operation and Control	25	25	0
Operation Monitoring	23	25	0
Operations Analysis	0	5	8
Programming	0	5	0
Quality Control Analysis	10	20	0
Repairing	8	15	0
Technology Design	0	0	0
Troubleshooting	15	20	0

Note: Rounding errors may be present.
Source: O*NET Online and Center for Business and Economic Research, The University of Alabama

Education and Training Issues

Educational attainment in the West AlabamaWorks region is lower compared to the state. Over the period between 2015 to 2019, 85.9 percent of residents age 25 and over had graduated from high school and 23.8 percent had a bachelor's or higher degree. This educational attainment is lower than Alabama's 86.2 percent for high school diploma and 25.5 percent for a bachelor's or higher degree. Skill and education requirements for jobs keep rising. This highlights a strong need to raise educational attainment in the region since most of the counties in the region have lower educational attainment than the state.

Table 3.16 shows the number of selected occupations in the region for which a particular education/training category is most common. In general, high-earning occupations require high educational attainment levels; all the top 50 high-earning occupations require a bachelor's or higher degree. Eleven (27.5 percent) of the 40 high-demand occupations require a bachelor's or higher degree. Ten (50.0 percent) of the top 20 fast-growing occupations require an associate degree at the minimum, with eight (40.0 percent) requiring a bachelor's or higher degree.

The 2018 to 2028 occupational projections indicate that future jobs will require postsecondary education and training at a minimum. Current job ads are requiring more than just a high school diploma or GED. Of the region's 653 single occupations, 138 are expected to decline over the period and education and training for these jobs should slow accordingly.

Table 3.15 Skills Gap Indexes (Base Year 2018 and Projected Year 2028)

Skill	Skill Type	Total Openings (Projected Demand)	Skills Gap Index	Replacement Index
Active Listening	Basic	12,145	72	96
Speaking	Basic	11,880	70	95
Monitoring	Basic	10,400	61	95
Critical Thinking	Basic	9,590	57	94
Coordination	Social	9,365	55	94
Social Perceptiveness	Social	9,095	54	96
Service Orientation	Social	9,000	53	97
Time Management	Resource	8,350	49	94
Reading Comprehension	Basic	7,980	47	95
Judgment and Decision Making	Systems	6,230	37	93
Writing	Basic	5,815	34	94
Active Learning	Basic	5,530	33	93
Complex Problem Solving	Complex	5,340	32	92
Instructing	Social	3,955	23	91
Persuasion	Social	3,955	23	93
Learning Strategies	Basic	3,420	20	92
Negotiation	Social	3,280	19	95
Operation Monitoring	Technical	3,115	18	93
Operation and Control	Technical	2,925	17	94
Systems Analysis	Systems	2,390	14	90
Quality Control Analysis	Technical	2,295	14	95
Mathematics	Basic	2,285	13	96
Systems Evaluation	Systems	2,265	13	91
Management of Personnel Resources	Resource	2,180	13	94
Troubleshooting	Technical	1,805	11	91
Equipment Maintenance	Technical	1,250	7	91
Repairing	Technical	910	5	90
Management of Financial Resources	Resource	595	4	92
Equipment Selection	Technical	575	3	90
Management of Material Resources	Resource	430	3	92
Operations Analysis	Technical	365	2	85
Installation	Technical	255	2	94
Science	Basic	210	1	71
Programming	Technical	85	1	94
Technology Design	Technical	40	1	88

Note: These are annualized skills indexes based on 2018 to 2028 occupation projections.
Source: Center for Business and Economic Research, The University of Alabama, Alabama Department of Labor, and O*Net Online

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Table 3.16 Number of Selected Occupations by Education/Training Requirement

Most Common Education/Training Requirements Categories	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
Doctoral Degree or First Professional Degree	1	0	15
Master's Degree	3	3	5
Bachelor's Degree	7	5	30
Associate Degree	0	2	0
Postsecondary Non-Degree	4	0	0
Some College, no Degree	1	0	0
High School Diploma or Equivalent	15	7	0
No Formal Educational Credential	9	3	0

Source: O*NET Online; Center for Business and Economic Research, The University of Alabama; and Alabama Department of Labor.

IMPLICATIONS AND RECOMMENDATIONS

From a 2018 base, worker surplus of about 8,200 and 5,400 are expected for 2028 and 2030, respectively (Table 3.17) due to decline in jobs. By 2040 employment is expected to grow but not fast enough to offset the growth of the working age population and a worker surplus of 5,000 workers is expected. The region must focus on worker skills and worker surpluses through 2040.

Table 3.17 Expected Worker Shortfall

	2018-2028	2018-2030	2018-2035	2018-2040
Total population growth (percent)	8.3	10.1	15.1	20.7
Age 20-64 growth (percent)	3.3	4.4	9.7	15.5
Job growth (percent)	-2.8	0.4	5.2	11.7
Worker shortfall (percent)	-6.1	-4.1	-4.5	-3.8
Worker shortfall (number)	-8,185	-5,438	-6,061	-5,025

Source: Center for Business and Economic Research, The University of Alabama.

Employment is critical to economic development, so strategies to address potential surpluses must be adopted and implemented. Such strategies should aim at increasing labor force participation, encouraging in-migration, and raising worker productivity. Efforts to address the need for higher labor force participation, higher productivity, and faster labor force growth to meet workforce demand must include: (1) improvements in education and its funding; (2) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (3) focus on hard-to-serve populations (e.g., out-of-school youth); (4) lowering of the high school dropout rate; (5) use of economic opportunities to attract new residents; (6) encouragement of older worker participation in the labor force; and (7) facilitation of in-commuting.

Improving education is vital because a highly educated and productive workforce is a critical economic development asset. The educational and training requirements of high-demand, fast-growing, and high-earning occupations show the significance of education in developing the workforce of the future. The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs in particular demonstrates a strong need for training in these skills. The pace of training needs to increase for technical, complex problem solving, and basic (science) skills; the scale of training should be raised for basic and social skills. Ideally, all high school graduates should possess basic skills so that postsecondary and higher education can focus on other and more complex skills while enhancing these basic skills. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps. Education and training for the 20 sharp-declining occupations in Table 3.13 should slow accordingly.

Another very important reason to improve education is that more educated people are more likely to work: data on worker participation and educational attainment show that labor force participation increases with worker education. Productivity also rises with education, which yields high private and social returns. Workforce development must view all of the education and other programs (e.g., adult education, career technical training, worker retraining, career readiness, etc.) as one system. Funding to support workforce development may require tax reform at state and local levels and must provide for flexibility as workforce needs change over time and demand different priorities.

Programs to assess, retrain, and place dislocated workers—especially those affected by outsourcing and structural changes in the economy—should be continued and enhanced because they can improve the labor force participation rate. Hard-to-serve populations include persons in poverty, those receiving welfare, those in sparsely populated areas, and those on active parole. These populations are often outside of the mainstream economy and are in poverty. They usually have difficulty finding work because they have low levels of educational attainment, lack occupational skills, or face geographic or other barriers. They are a potential human resource and investment in training, transportation, childcare, infrastructure, etc. may be needed to tap this resource.

In-migration is one way of growing the labor force as it helps population growth. The region's population growth is average but the labor force growth rate is not expected to meet future job demand. Higher employment demand could be alleviated somewhat with in-commuting. However, new residents can be attracted using the higher-paying job opportunities from the region's economic development successes. Investment in amenities and infrastructure may be needed to support such growth. In-migration is generally more beneficial to a region than in-commuting since it grows the economy faster and adds to the tax base.

Policies that facilitate and encourage older worker participation are needed as older workers can help meet the region's workforce strategies. Such policies can be related to income taxation, job flexibility, and retirement programs. As the share of older people in the population is projected to increase, it becomes even more important that they be active in the workforce. Older worker participation has been rising nationally since the early 1990s. This has been attributed to reasons including:

- Older workers can work longer because they are healthier
- The number of physically demanding jobs is falling
- Defined contribution plans are replacing pensions
- There are fewer employer-paid retiree health insurance programs
- Social security reforms affecting those born after 1938 that (i) gradually raised the normal retirement age from 65 to 67, (ii) increased the rate at which monthly payments rise with delayed benefits, and (iii) eliminated the reduction in benefits for those working beyond the full retirement age.

Diversifying the region's economy will strengthen it. This demands that economic development also focus on retaining, expanding, and attracting businesses that provide more high-earning jobs. Current workers—including the underemployed—would welcome these higher-earning opportunities. An economic development focused on diversification would require that workforce development efforts pay attention to postsecondary and higher education systems to ensure a ready and available workforce for new and expanding businesses. The higher incomes earned by graduates of these institutions will help raise personal income for the region and provide additional local (county and city) tax revenue. Raising personal income by improving educational attainment and technological skills is an effective economic development strategy. Together, workforce development and economic development can build a strong, well-diversified economy. Indeed, one cannot achieve success without the other.

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